ROADMAP FOR MILSPEC REFORM

A National Imperative

Debra van Opstal

Ironically, one day we may look back upon the Cold War as a time of relative stability and containable risk, a time when the only major threat to world peace was that the two superpowers would annihilate each other. Today, risks are much more diverse and unpredictable. We are far less clear about who our enemies are and what they are capable of doing: a resurgent, hardline Russia; a belligerent China; rogue states, like Iraq, who have sizeable regional forces; the unholy nexus of terrorists; and drug kingpins who own the best in advanced technology that billions in laundered dollars can buy.

At such a time, the most comforting response would be to prepare for all contingencies. But, the reality is financial resources available for defense are declining. The Department of Defense (DOD) will not be able to subsidize a defense industrial base that can sustain U.S. readiness across-the-board. It must take advantage of existing research and development (R&D), engineering, and production capabilities to supply defense needs. The problem is that DOD has difficulty gaining access to the national industrial base.

Two major barriers stand in the way of integrating civilian and defense production. The first is legal and regulatory. Government contracts often impose unique terms and conditions, requiring information that commercial companies do not routinely collect or cannot certify with assurance. Companies typically respond to such requirements either by establishing special data management or administrative systems (which add cost and inefficiency) or by avoiding certain types of government contracts altogether. Because many of these requirements of government contracting are rooted in statute, Congress must act to remove these impediments to a more flexible industrial base.

New Report on MILSPECS Released

A new Center for Strategic and International Studies (CSIS) report, *Roadmap for Milspec Reform: Integrating Commercial and Military Manufacturing*, describes the second barrier in detail. The DOD unique way of specifying its requirements, popularly known as the "MILSPEC" problem, often forces companies to create separate engineering and production lines for defense work when equivalent capabilities exist on the commercial side of the business.

The need for some type of specification is not really in question. All major buyers use them to describe the needed item (its form, fit and function) and the desired level of performance. Specifications are needed to allow the DOD to standardize on an existing product or service. They ensure that the Department does not procure 15 different iterations of the same part that are not interchangeable and require separate storage and support.

Specifications also attempt to guarantee lives are not lost because military equipment fails in the stress of combat, a goal borne of bitter past experience. In 1879, a column of 1,300 British soldiers was annihilated because their ammunition cases were screwed shut. In 1942, the German Army's 48th Panzer Division found that only 42 of the 104 tanks en route to Stalingrad could be moved; mice had eaten the insulation off the electrical wiring of the other tanks. In the South Pacific in World War II, U.S. supplies shipped to the area at enormous expense were corroded by fungus. Today, specifications ensure that ammunition boxes can be opened without tools, insulation is rodent proof, and fungus is not a threat.

The problem, then, does not reside with the principle of specification. Rather, the process by which specifications are developed and applied has become excessively rigid.

Requirements in new systems are not subject to rigorous cost performance trade-offs or dual-use considerations. One cannot design a weapons system and then expect to find its components commercially available or civilian factories to build it.

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The *documents* that describe products or processes are flawed. Too often they describe commercial items in uniquely military ways, specify obsolete technologies or detail management practices that are not found in the commercial sector.

The *application* of uniquely military specifications is largely uncoordinated across the DOD. MILSPECs and standards are put in contracts even though the spec may have been canceled, replaced or superseded by an updated document.

The CSIS MILSPEC report deals with requirements, documents and application of documents with specific recommendations in each area.

Requirements

Military requirements have either been generated by user-pull or technology-push methods. Often the Services will identify a vulnerability that cannot be closed by changes in tactics or in strategy; it must be met with new equipment. At that point the technologists have free rein to design the new system to the "wish list" level of performance (and in order to get congressional support, it makes political sense to push the performance envelope as far as possible). The result is usually a weapons system with defense-unique features whose cost far exceeds real military value and which cannot be built on a dual-use production line.

Despite the exhortation to use existing product and process technologies to save cost, most new requirements packages are built totally without regard to whether they will require military-unique development and production rather than time- and cost-effective nondevelopment item (NDI) solutions, particularly commercial solutions. They are usually generated without the benefits of performance priorities and cost-performance trade-offs.

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Ironically, most of the elements needed to emphasize NDI procurement and cost-performance trade-offs are already in place. The problem is they don't work well and often not at all. Clearly, what is needed is a process that enforces the trade-offs among performance, cost and dual-use opportunities more aggressively. The CSIS Working Group on MILSPECs proposed to formalize specific evaluation criteria at Defense Acquisition Board (DAB) milestones one and two, in the review of Operations Requirements Documents as well as in the Request for Proposal (RFP) Review. Key criteria included:

—*Money*. Provide an up-front estimate of total dollars available for the program

—*Numbers*. Determine how many units will be needed to achieve force effectiveness

—*Priorities*. Prioritize performance characteristics

—*Justification*. Provide a solid rationale for each requirement in the system (a know-why benchmark)

—*Market Analysis*. Provide a thorough analysis of potential marketplace solutions, especially those that shrink the performance envelope to accommodate lower cost commercial solutions.

Improving Document Content

The phrase military specifications and standards refers to the 32,000 documents in the DOD Index of Specifications and Standards (DODISS) that are uniquely military. The other 17,000 documents in the index are composed of other types of specifications: commercial item descriptions, federal standards, and nongovernmental standards (e.g., commercial or international standards).

The DODISS is such a mixed bag of documents, it is impossible to arrive at any one silver bullet. Some specifications describe products that are available off-the-shelf, such as white gloves, tacos or hot dogs. There is no real reason to have specifications for such items. Indeed, they divert scarce resources from the task of drafting, reviewing and updating specifications for combat-related equipment. The Working Group recommended that these specifications be eliminated or converted to Commercial Item Descriptions.

Additionally, the DODISS includes a number of specifications — perhaps as high as 30 percent of the total documents — that describe obsolete technologies. The Working Group proposed a number of alternative ways to weed out these specifications: create a 7-year sunset clause on all documents; require coordination with industry users in the overage document review

cycle; expand the electronic data feedback system to facilitate industry comment; and institute a new classification, "Inactive for New Design," for specifications that are obsolete but needed to maintain active systems.

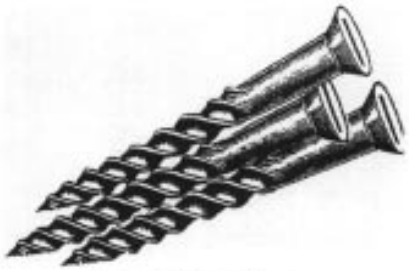
Complicated Problems

Probably the most complicated problems DOD must address are the process and management specifications. These specifications, commonly called standards, describe a management procedure or manufacturing process rather than a performance result. In describing precisely how the product is to be manufactured or quality assurance and reliability program is to be structured, or the work managed, DOD often precludes world class operations from applying their expertise and technological capability to defense needs.

These process standards have their roots in past failures — unreadable instrument displays, substandard packaging, products that failed too soon or were mismatched to the larger system. The problem today is that once a process standard is written and cited in a system design, it locks in a technology for all future contracts. Because that technology continues to evolve in the commercial sector, the specification will eventually be at odds with best commercial practice.

The real question is *why* DOD needs to tell contractors how to perform manufacturing processes instead of simply defining the end result in form, fit, function and performance terms. Management standards only guarantee that the compliance organization meets the spec, not that the product meets performance expectations. Manufacturing standards cannot keep pace with state-of the-art process improvements and are likely to become outmoded even more rapidly in a flexible manufacturing environment.

The Working Group suggested that DOD can explore alternative ways to



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ensure that its performance targets are met without imposing process requirements (e.g., use third-party certifications, acceptance testing, qualified manufacturer's certifications, nongovernment standards, or its own "ility" personnel to assess whether the contractor's system meets the performance goals).

Noting the urgency of reform measures in this area, the Committee recommended that all high-level or manufacturing standard should be converted to performance-based documents within 2 years. Any standard that has not been converted within that period should be made advisory only.

Application of Documents

The problem, unfortunately, is not limited to document content but includes how the documents are applied. The buyers of goods and services for the Defense Department do not hang their hats in one place; they are spread out organizationally and geographically. Although the documents may be standardized, the way they are referenced in contracts is not. That means that MILSPECs can be put on a contract even when they have been canceled or replaced. Or, a contracting officer might reference an entire MILSPEC when only a few sections are relevant to the immediate purchase. Even worse, that outdated or inappropriately referenced spec will flow down to all lower-tier suppliers. The bottom line is that even well-written, performance-based specifications can cause problems if they are not referenced or are improperly referenced.

The Working Group proposed that DOD should require program managers, or individuals responsible for authorizing purchases, to offer a rationale for the inclusion of uniquely military specifications or standards before they are put on contract. The Group recommended that waiver provision be provided in appropriate circumstances, such as, when the specification has been certified as being performance-based or when it describes a uniquely military characteristic (e.g., surviving electromagnetic impulses).

Finally, The Working Group noted one reason previous MILSPEC reform efforts failed was that they did not address the underlying lack of control of the standardization process by DOD management.

Lack of Budgetary Control

First, there is a lack of budgetary control. Although there is a substantial policy hierarchy for standardization activities within DOD and the Services, it has limited control of funding and manpower levels of the offices (preparing activities) that actually review, maintain, convert or update specifications in the DODISS.

Standardization is a corporate, not a field command, goal. When funds are allocated to field commands, it falls to the local commander to allocate those resources among competing priorities; for example, repairing the facility, maintaining manpower levels, developing specifications for new systems, or sifting through out-

dated ones to delete or modify them. Not surprisingly, the last tends to have a very low priority for the local commander (albeit a high priority for policy makers in the Office of the Secretary of Defense (OSD) who want to foster dual-use). There is no way to enforce corporate MILSPEC goals because there is no corporate control of the funding or manpower levels in the preparing activities.

The Working Group recommended that standardization activities be made a line item in the budget. Funding for local preparing activities should be funneled through the departmental standardization offices (DEPSOs) and allocated for support of standardization initiatives, training of personnel, conversion of "how-to" documents into performance-based standards or participation in internal or external workshops on standardization.

Metrics System

Second, DOD management has no system in place to measure whether its policy initiatives are actually being carried out. There are critical data elements that would track the progress of MILSPEC reform that are not currently available, such as the volume of commercial items being bought or the number of inventory items (national stock numbers) bought to military specifications as opposed to some other type of specification. The Working Group strongly recommended that DOD management put such a metric system in place.

The MILSPEC reform is more than just a desirable goal. It is a national imperative. Military specifications and standards affect most of the major policy issues in defense procurement today. They increase procurement costs and impede defense conversion efforts. Unique military specifications also hamper DOD access to the broader national industrial base. The new administration has promised to "reinvent government." Reinventing the way DOD does business offers one of the best places to start.

DSMC ADOPTS ALTERNATIVE SCHOOL

In the summer of 1993, the Defense Systems Management College (DSMC) entered into the Partners in Education Program with the Bryant Adult Alternative School. Fort Belvoir has seven adopted schools. The Partners in Education Program, a program sponsored by the Fairfax County, Va., public school system, provides the opportunity for the working community at Fort Belvoir to assist teachers and students in or outside the classroom.

The DSMC-adopted students, ranging in age from 17-23, dropped out of high school but, since, have realized the importance of a diploma and pursue its requirements at the Bryant School.

On campus, DSMC Professor Dan Robinson presented a workshop on TQM and leadership skills in the classroom, specifically for Bryant School teachers. Two other DSMC employees have given presentations to Bryant students. Ms. Myrna Bass of the Resource Learning Center presented "Self Esteem," and SFC Ivan Blanco, USA, discussed "Fitness vs. Drugs and Alcohol in your Life."

On November 18, 1993, 32 students toured seven different departments at DSMC. This tour will extend into student "job shadowing" with DSMC employees at a later date. Job shadowing provides a real-life, on-the-job experience for the student who has a career interest in a specific field.

Bryant School supplies DSMC with special requests for tutors, mentors and guest speakers. The DSMC also collects cash-register receipts from local grocery stores for classroom purchase of computers. When possible, software is transferred to the school.

Photo by Richard Mattox

Seated from left: Brig Gen (Sel.) Claude M. Bolton, Jr., USAF, DSMC Commandant; Robert Spillane, Superintendent, Fairfax County Schools; and Armand Sebastianelli, Principal, Bryant Adult Alternative School; with student.